

VII.H. Go-Around/Rejected Landing

References: FAA-H-8083-3; POH/AFM

Objectives	The student should develop knowledge of the elements related to a Go-Around/Rejected Landing. The student will understand the importance of a prompt decision and have the ability to quickly and safely configure the airplane and adjust its attitude to accomplish a go-around. The student will perform the maneuver to the standards prescribed in the PTS.
Key Elements	<ol style="list-style-type: none">1. Power2. Attitude3. Configuration
Elements	<ol style="list-style-type: none">1. Situations When a Go-Around may be Necessary2. Promptly Deciding to Discontinue a Landing3. Cardinal Principles of the Procedure4. Control Pressures5. During the Climb Out6. Communication
Schedule	<ol style="list-style-type: none">1. Discuss Objectives2. Review material3. Development4. Conclusion
Equipment	<ol style="list-style-type: none">1. White board and markers2. References
IP's Actions	<ol style="list-style-type: none">1. Discuss lesson objectives2. Present Lecture3. Ask and Answer Questions4. Assign homework
SP's Actions	<ol style="list-style-type: none">1. Participate in discussion2. Take notes3. Ask and respond to questions
Completion Standards	The student shows the ability to recognize when a go-around is needed and promptly configures the airplane and adjusts its attitude to safely execute the rejected landing.

Instructors Notes:

Introduction:

Attention

Interesting fact or attention grabbing story

There will be times when we have to discontinue a landing and set up for another one. This may be a result of a dangerous situation or may just be necessary to re-establish an approach. Either way, we definitely want to know what we're doing as we're getting closer and closer to the ground.

Overview

Review Objectives and Elements/Key ideas

What

A go-around is the discontinuance of a landing approach in order to make another attempt to land under more favorable conditions (it is an alternative to any approach or landing). The go-around is a normal maneuver that may at times be used in an emergency situation. It is warranted whenever landing conditions are not satisfactory and the landing should be abandoned or re-setup.

Why

The need to discontinue a landing may arise at any point in the landing process and the ability to safely discontinue the landing is essential, especially due to the close proximity of the ground.

How:

1. Situations When a Go-Around may be Necessary

- A. There are many factors which can contribute to unsatisfactory landing conditions. Situations such as:
 - i. Air traffic control requirements
 - a. Low approach only request
 - b. Told to go-around due to traffic, obstruction, etc. on the runway
 - ii. Unexpected appearance of hazards on the runway
 - a. Deer, coyote, etc.
 - iii. Overtaking another airplane
 - iv. Wind Shear
 - v. Wake Turbulence
 - vi. Mechanical Failure
 - a. Gear Issues
 - vii. Unstable Approach
 - a. Too low or too high
 - Can't get established (on glide slope or on centerline)
 - b. Airspeed control
 - c. Rate of descent
 - viii. Whenever safety dictates a go-around
- B. These situations are all examples of reasons to discontinue a landing approach and make another approach under more favorable conditions
- C. **CE** - Failure to recognize a situation where a go-around/rejected landing is necessary

2. Promptly Deciding to Discontinuing a Landing

- A. The go-around maneuver is not inherently dangerous
 - i. It only becomes dangerous when unnecessarily delayed or executed improperly

VII.H. Go-around/Rejected Landing

- B. Delaying the Initiation of a Go-around
 - i. Stems from two sources:
 - a. Landing Expectancy
 - The anticipatory belief that conditions are not as threatening as they are and that the approach will surely be terminated with a safe landing
 - b. Pride
 - The mistaken belief that the act of going around is an admission of failure
- C. The earlier we recognize a situation that warrants a go-around, the safer the go-around/rejected landing will be
 - a. It is therefore, important to *make a prompt decision*
 - Provide as little time as possible for the airplane to descend and for the situation to magnify
- D. Once you decide to go-around stick to it!
 - i. Don't change your mind and try to land
- E. **CE** - Hazards of delaying a decision to perform a go-around/rejected landing
 - i. Delaying the go-around could result in recovery and a normal, safe landing, but the chance of the situation escalating and ending poorly is much higher than during a safe, stabilized approach
 - ii. Do not delay the decision to go-around, simply go-around and set up for another landing

3. Cardinal Principles of the Procedure

- A. The improper execution of the go-around procedure stems from a lack of familiarity with the three cardinal principles of the procedure
- B. Power
 - i. Power is the pilot's **FIRST** concern
 - a. The instant the pilot decides to go-around, full or maximum takeoff power must be applied smoothly and without hesitation
 - Full power must be held until flying speed and controllability are restored
 - b. Applying partial power is never appropriate
 - ii. Torque Effect and Right Rudder
 - a. Increasing power to max will result in left turning tendencies just like during takeoff
 - Anticipate the turning tendencies using right rudder to maintain coordination
 - b. **CE** - Failure to compensate for torque effect
 - iii. Inertia
 - a. The pilot must be aware of the degree of inertia that must be overcome
 - It takes tremendous power before an airplane settling towards the ground can regain sufficient airspeed to become fully controllable and capable of turning/climbing safely
 - a The downward inertia of the airplane must be slowed, stopped, then reversed
 - b Newton's 1st Law - A body in motion wants to stay in motion (inertia)
 - iv. **CE** - Improper power application
- C. Attitude
 - i. Attitude is always critical when close to the ground
 - a. Too much nose up or down can create problems
 - ii. When adding power, it is very important to keep the nose from pitching up prematurely
 - a. An attitude must be maintained that will allow the airplane to build airspeed before any effort is made to gain altitude or turn
 - Pitch attitude must slow/stop the descent
 - Airspeed must be built up well above the stall speed
 - b. Raising the Nose too Early
 - The natural tendency is to immediately pull the nose up

VII.H. Go-around/Rejected Landing

- a The pilot must accept that an airplane will not climb until the airspeed has reached a safe speed
 - iii. Pitch for V_Y
 - a. As soon as the appropriate climb airspeed and pitch attitude are attained the pilot can climb out
 - Pitch for and climb at V_Y (V_X , if necessary)
 - a **CE** - Failure to maintain recommended airspeeds
 - Trim the airplane
 - a A considerable amount of control pressure can be removed
 - b Quick relieving of the control pressures
 - 1. Trim more precisely when stabilized
 - c **CE** - Improper trim procedure
 - iv. **CE** - Failure to control pitch attitude
 - a. Do not leave the nose pitched down for the descent with full power
 - This will greatly increase the rate of descent
 - Add power, adjust pitch to accelerate to a safe speed, then climb
 - v. Summary: Increase power to max, when able (safe airspeed), pitch the nose to climb at V_Y (or V_X)
- D. Configuration
 - i. Cleaning Up the Airplane
 - a. 1st Concern: Landing Flaps
 - b. 2nd Concern: Gear (if retractable)
 - c. 3rd Concern: Takeoff Flaps
 - ii. Flaps
 - a. In the DA20, after adding full power and establishing a climb attitude, the Landing Flaps should be retracted
 - Going directly to cruise flaps will result in a loss of lift possibly causing the airplane to settle to the ground
 - iii. Gear
 - a. After a positive rate of climb is established the gear can be retracted
 - Only retract after the initial/rough trim has been established and when it is certain the airplane will remain airborne
 - Do not retract the gear in a descent
 - iv. Retract Takeoff Flaps
 - a. After reaching V_Y and at a safe altitude
 - v. Flaps Before Gear
 - a. Two reasons:
 - Full flaps produce more drag than the landing gear
 - a Retracting flaps first, reduces the most drag immediately
 - In the case the airplane should inadvertently touchdown it is desirable to have the gear down and locked
 - vi. **CE** - Improper wing flaps or landing gear retraction procedure

4. Control Pressures

- A. When takeoff power is applied
 - i. The airplane's nose will rise suddenly
 - a. It will be necessary to hold forward pressure to maintain straight and level flight and a safe climb attitude
 - The airplane has been trimmed for the approach
 - a The nose is trimmed up due to low power, and low airspeed

VII.H. Go-around/Rejected Landing

- ii. The nose will veer to the left
 - a. Right rudder pressure will be necessary to counteract P-Factor and Torque
 - b. **CE** - Failure to compensate for torque effect
- iii. Trim should be used to relieve adverse control pressures and assist in maintain the proper attitude
 - a. Rough trim
 - Airspeed is building, controls effectiveness is increasing- you will have to re-trim
 - b. **CE** - Improper trim procedure

5. During the Climb Out

- A. Maintain a ground track parallel to the extended centerline that allows you to see the runway
 - i. Maneuver to the side of the runway/landing area to clear the area and avoid obstructions
 - a. Get in a position where you can see the runway
 - b. Maintain visual contact to avoid another dangerous situation
 - Especially if the go-around was due to another plane taking off on the runway
 - ii. Wind correction is necessary
- B. Remain clear of obstacles/obstructions/other traffic
 - i. May have to climb at V_x to avoid obstacles
- C. **CE** - Failure to maintain proper track during climb-out
- D. **CE** - Failure to remain well clear of obstructions and other traffic

6. Communication

- A. Once the airplane is under control, then you can communicate with the tower or appropriate facility
 - i. Let them know you're "Going Around"
 - ii. Aviate, Navigate, then Communicate
 - a. Fly first, then deal with the radios

Common Errors:

- Failure to recognize a situation where a go-around/rejected landing is necessary
- Hazards of delaying a decision to perform a go-around/rejected landing
- Improper power application
- Failure to control pitch attitude
- Failure to compensate for torque effect
- Improper trim procedure
- Failure to maintain recommended airspeeds
- Improper wing flaps or landing gear retraction procedure
- Failure to maintain proper track during climb-out
- Failure to remain well clear of obstructions and other traffic

Conclusion:

Brief review of the main points

The go-around is a very important maneuver that is essential in an emergency situation. Knowing the procedure to properly perform the maneuver will provide a considerably safer situation. The pilot's first concern is power, followed by the establishing the correct attitude, and configuration.

PTS Requirements:

To determine that the applicant:

1. Exhibits instructional knowledge of the elements of a go-around/rejected landing by describing:
 - a. Situations where a go-around is necessary.
 - b. Importance of making a prompt decision.

VII.H. Go-around/Rejected Landing

- c. Importance of applying takeoff power immediately after the go-around decision is made.
 - d. Importance of establishing proper pitch attitude.
 - e. Wing flaps retraction.
 - f. Use of trim.
 - g. Landing gear retraction.
 - h. Proper climb speed.
 - i. Proper track and obstruction clearance.
 - j. Use of checklist.
2. Exhibits instructional knowledge of common errors related to a go-around/rejected landing by describing:
 - a. Failure to recognize a situation where a go-around/rejected landing is necessary.
 - b. Hazards of delaying a decision to go-around/rejected landing.
 - c. Improper power application.
 - d. Failure to control pitch attitude.
 - e. Failure to compensate for torque effect.
 - f. Improper trim technique.
 - g. Failure to maintain recommended airspeeds.
 - h. Improper wing flaps or landing gear retraction procedure.
 - i. Failure to maintain proper track during climb-out.
 - j. Failure to remain well clear of obstructions and other traffic.
 3. Demonstrates and simultaneously explains a go-around/rejected landing from an instructional standpoint.
 4. Analyzes and corrects simulated common errors related to a go-around/rejected landing.

VII.H. Go-around/Rejected Landing

